



5.0 CONCLUSIONS

5.1 SUMMARY OF RELEASE INFORMATION

Table 11 presents a summary, based on available information, of potential releases at each SWMU. Based on the available data, there is no evidence of a release potentially threatening human health or the environment associated with some SWMUs and therefore no further action is necessary for those units. Other units will require further evaluation as part of the RCRA Facility Investigation.

The monitoring wells that were identified in the preceding sections in most cases were not installed expressly to monitor the SWMUs. Furthermore, in some instances, there is not yet sufficient groundwater elevation data to determine the relationship of SWMUs to wells and, therefore, whether a particular pit is a potential source of groundwater impacts.

Groundwater data, where available, were compared to current (1993) and proposed Maximum Contaminant Levels (MCLs) from the Safe Drinking Water Act. These are drinking water standards for human consumption (i.e., applied after water treatment and at the consumer's tap) and represent conservative levels for this comparison because groundwater on the U.S. Steel site is not and will not be used for drinking purposes. Where groundwater data is consistently below or near these levels, there is no evidence of a release potentially threatening human health or the environment and therefore no further action is necessary. Where groundwater data exceed these drinking water levels, further evaluation of the risk associated with the release is necessary to determine whether or not the release potentially threatens human health or the environment. These evaluations will be made as part of the RFI.

5.2 DATA EVALUATION AND ADDITIONAL DATA REQUIREMENTS

The available data for Fairless Works soils, surface water, and groundwater as well as the data for characterization of site environmental conditions includes numerous studies and investigations performed since the late 1970s for U.S. Steel. Several of these studies included extensive sampling and analyses of plant waste streams. They also address conditions at specific Solid Waste Management Units (SWMUs) as discussed in previous sections. A considerable amount of useful data is available. However, the limited amount of data in some areas and the uncertainties in the data do not allow a quantitative determination of threats to human health and the environment. U.S. Steel believes that the data permits an overall assessment of conditions on the site and provides information upon which the focus of attention in the RFI and additional data needs in the RFI can be based.

The available database that characterizes the wastes that were handled and disposed at Fairless Works is extensive and generally adequate to allow identification of potential contaminants of concern. The site specific data can be supplemented by extensive steel industry records since the

types of materials handled at Fairless Works are generic to the industry. In certain circumstances, plant records are unclear in identifying all materials that were disposed in particular units. These uncertainties are noted in the discussion of individual units in earlier sections of this report.

The available groundwater data at Fairless Works is adequate to identify specific concerns for significant portions of the site where waste characteristics indicate potential migration in groundwater. Existing hydrogeologic information and groundwater chemistry may not be adequate to allow evaluation of potential impacts to offsite areas and, in particular, to allow evaluation of risks to potential receptors. Some of the existing well information may need to be updated to allow a more current evaluation of site hydrogeologic conditions. In addition, the condition and usability of existing wells will need to be evaluated. Also, limited data are available on the effects of seasonal variation and tidal fluctuations on groundwater flow directions. Additional groundwater evaluation will be needed as part of the RFI. This will include the development of geologic cross-sections and groundwater contour maps and evaluations of aquifer properties, interrelations between units and surface waters, and potential tidal effects.

The available data on point source surface water discharges from the site is extensive. The majority of the available surface water data was collected as part of the monitoring of NPDES permitted outfalls. As discussed previously, all surface drainage from the site is conveyed through monitored outfalls and, therefore, extensive data are available. Discharges to surface waters at the site are all subject to NPDES permitting requirements and appropriate monitoring. The discharge limits and permit conditions are established by PADER and reviewed by USEPA and DRBC. A review of these surface water discharges and permits is not the subject of corrective action.

Considerable water quality data have been collected for the Delaware River by DRBC and others. This data is extensive and because of the large complex nature of surface water flow in the Delaware, it is not likely to be relevant to this site. Because the potential migration of contaminants in the Delaware is a likely step in completing pathways to receptors, further evaluation of the Delaware is likely to be an important element of the RFI. Additionally, there are other surface water bodies onsite and offsite (borrow pits, canals, and Van Sciver Lake) which may be potential pathways, and these will be evaluated in the RFI.

Because of the flat topography and permeable soils on the site, soil/waste surface runoff (horizontally) is not likely to be a significant migration pathway. Although only limited data exists concerning this pathway, extensive evaluation is not likely to be needed as part of the RFI. [However,] [t]The downward (vertical) migration of contaminants from certain soil/waste materials to subsurface soil or groundwater is likely to present a more significant potential pathway for migration at those certain SWMUs containing leachable waste types. Thus, leaching and migration of groundwater from these SWMUs will be an important element of the RFI.

Although the U.S. Steel site has currently restricted access, this may not be the case in the future as redevelopment of the site occurs. It is anticipated that sections of the site will be redeveloped for heavy industrial uses. The potential for human and environmental receptor exposure to soil/waste will, therefore, be evaluated as part of the RFI.

Air emissions of volatile compounds and particulate emissions are not significant pathways for migration at this site. A substantial evaluation of fugitive particulate emissions was made as part of the sinter plant air permitting at a point in time when the plant was under intense use. Air emissions were not found to pose an unacceptable risk at that time, and since future uses of the site are likely to further minimize these emissions, air emissions are not likely to be a significant element of the RFI.

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LIST OF ACRONYMS

AERP	Alternative Emissions Reduction Plan
API	American Petroleum Institute
ASTM	American Society of Testing and Materials
BF	Blast Furnace
BOCA	Building Officials and Code Administrators
BOD	Biological oxygen demand
BP	Borrow Pit
CFS	Cubic feet per second
CEM	Continuous Emissions Monitoring
EPA	U.S. Environmental Protection Agency
DRBC	Delaware River Basin Commission
EAF	Electric arc furnace
EP-TOX	Extraction Procedure Toxicity Test
ESP	Electrostatic Precipitator
ETL	Electrolytic Tin Line
FAC	Facultative
FACW	Facultative Wetland
FMTF	Finishing Mill Treatment Plant
FSOD	First stage oxygen demand
G.R.O.W.S	Geological Reclamation Operations and Waste Systems Inc.
ID	Internal diameter
MCL	Maximum Contaminant Level
MSL	Mean sea level
NAAQS	National Ambient Air Quality Standards
NFPA	National Fire Prevention Association
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OH	Open Hearth
OIP	Oil Interception Plant
OSHA	Occupational Safety and Health Administration
PADER	Pennsylvania Department of Environmental Resources
PCB	Polychlorinated biphenyl
PSD	Prevention of Significant Deterioration
PVC	Polyvinyl chloride
RACT	Reasonably Available Control Technology
RFA	RCRA Facility Assessment
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SICEA	Steel Industry Compliance Extension Act
SIP	State Implementation Plan
SPL	Spent Pickle Liquor
STP	Sewage Treatment Plant

SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Tar Decanter Sludge
TFS	Tin-free Steel
TOC	Total organic carbon
TPH	Total petroleum hydrocarbons
TSCA	Toxic Substance Control Act
TTP	Terminal Treatment Plant
USGS	U.S. Geological Survey
USS	U.S. Steel
USX	USX Corporation
VE	Visible Emission
WMPA	Waste Management of Pennsylvania
WMNA	Waste Management of North America